



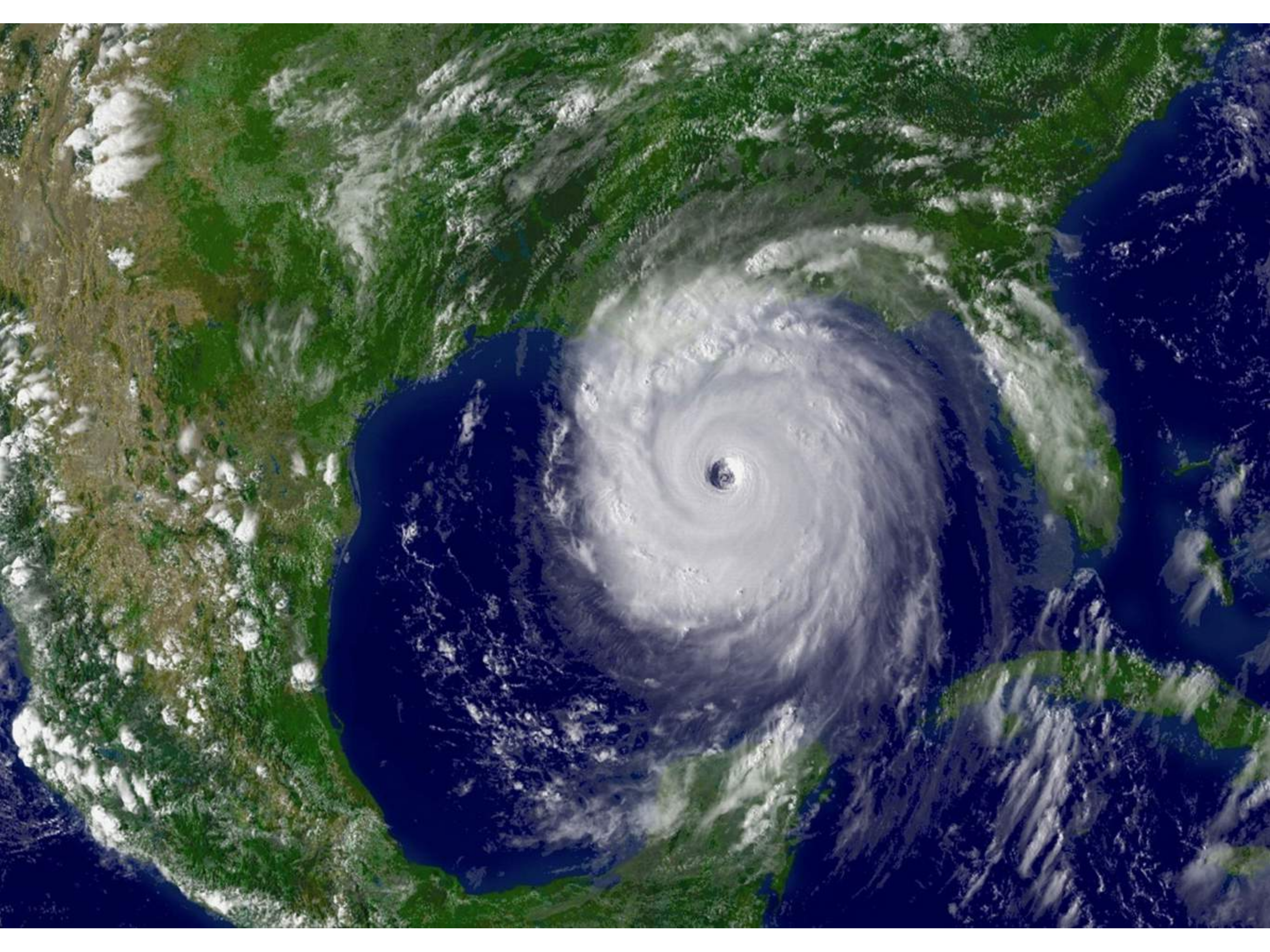


Uzroci, znanost i posljedice





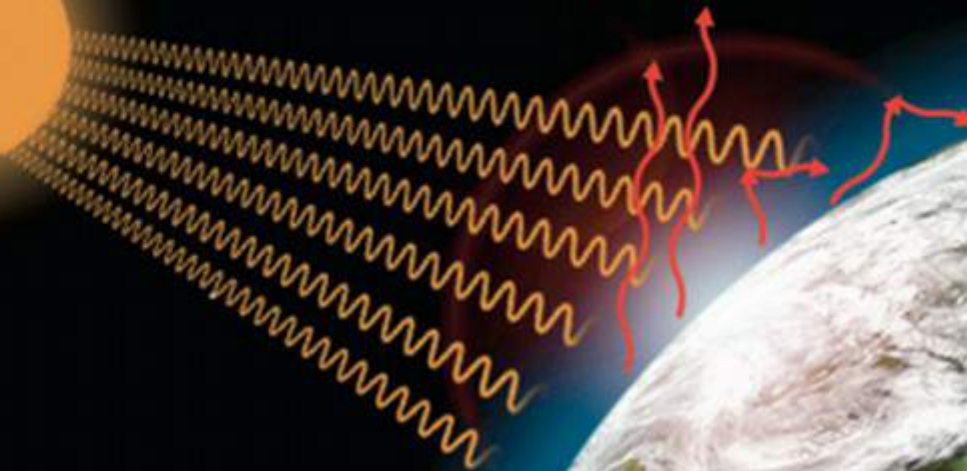






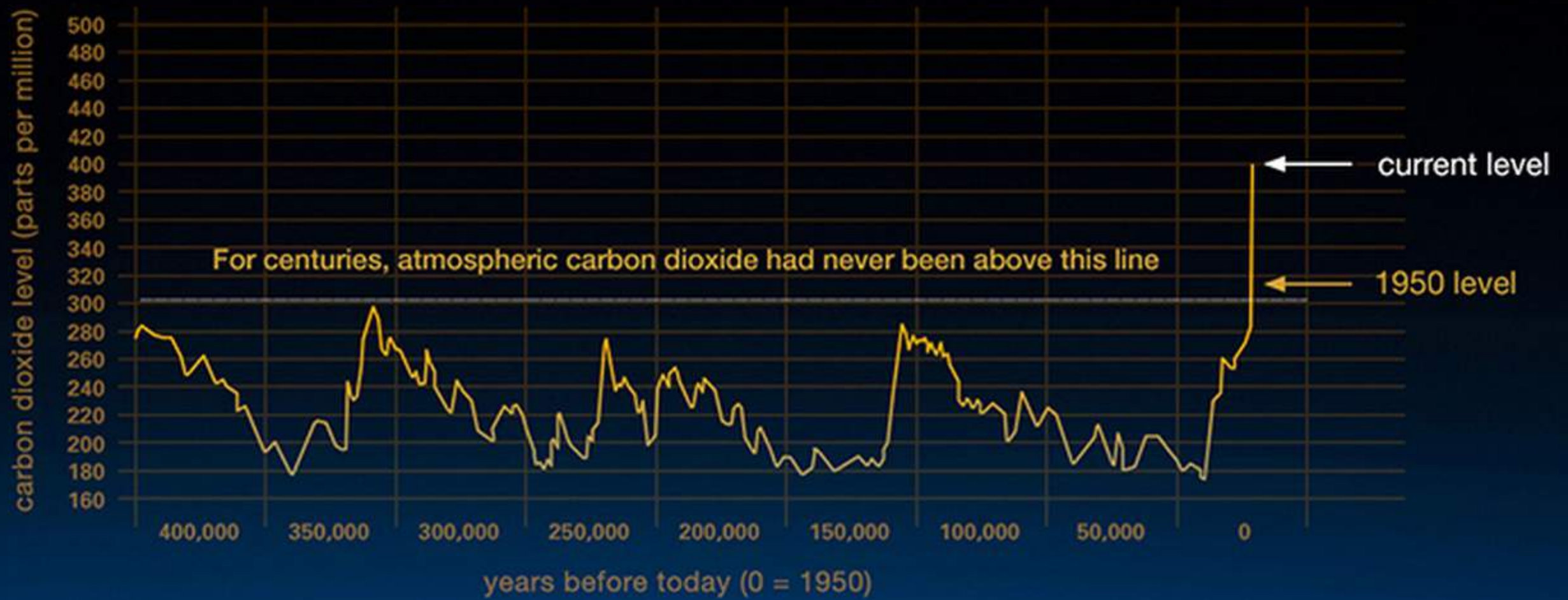






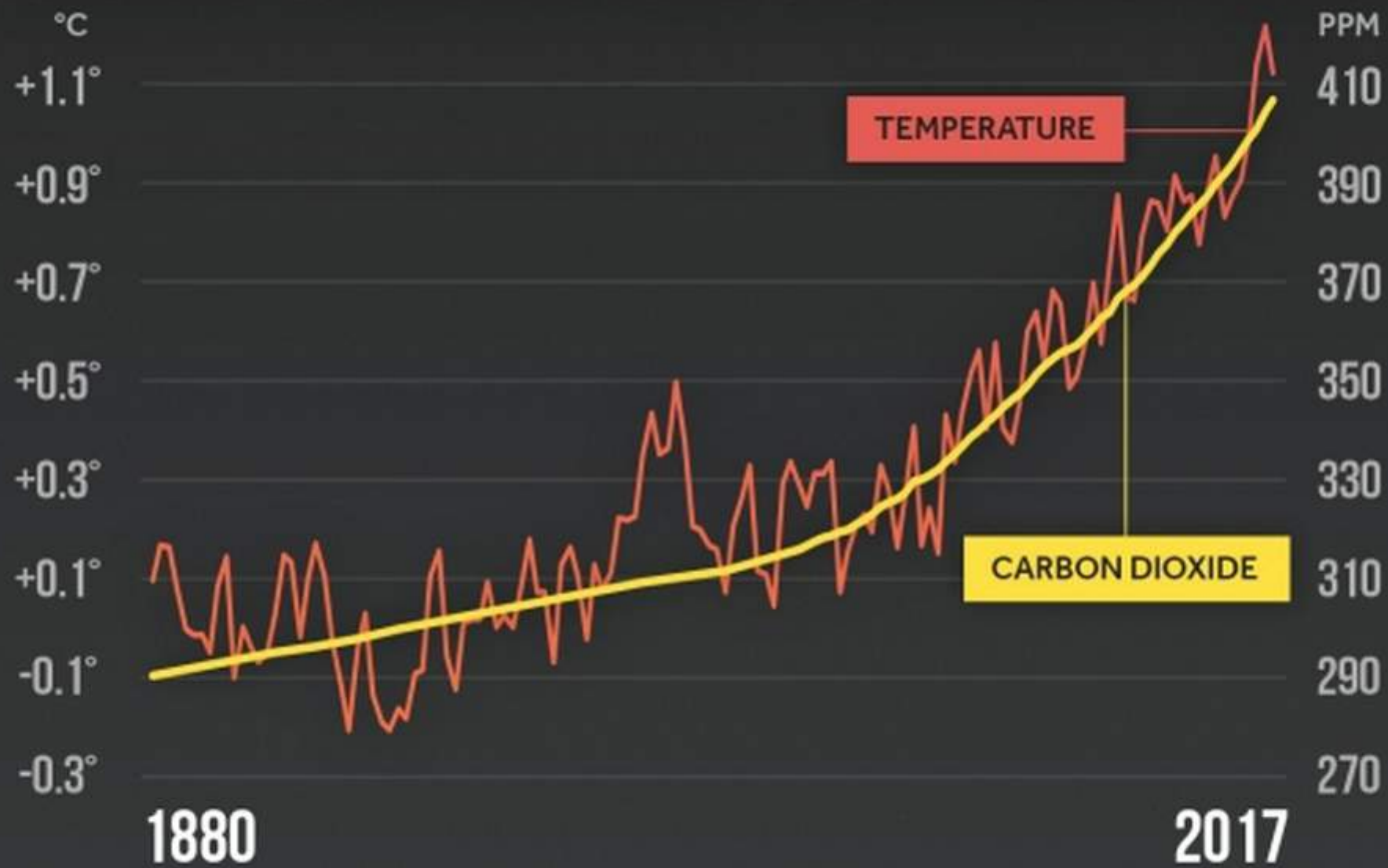
**THE GREENHOUSE  
EFFECT**







# GLOBAL TEMPERATURE & CARBON DIOXIDE



Global temperature anomalies averaged and adjusted to early industrial baseline (1881-1910)  
Source: NASA GISS, NOAA NCEI, ESRL

CLIMATE  CENTRAL



Safari File Edit View History Bookmarks Window Help

sciencealert.com

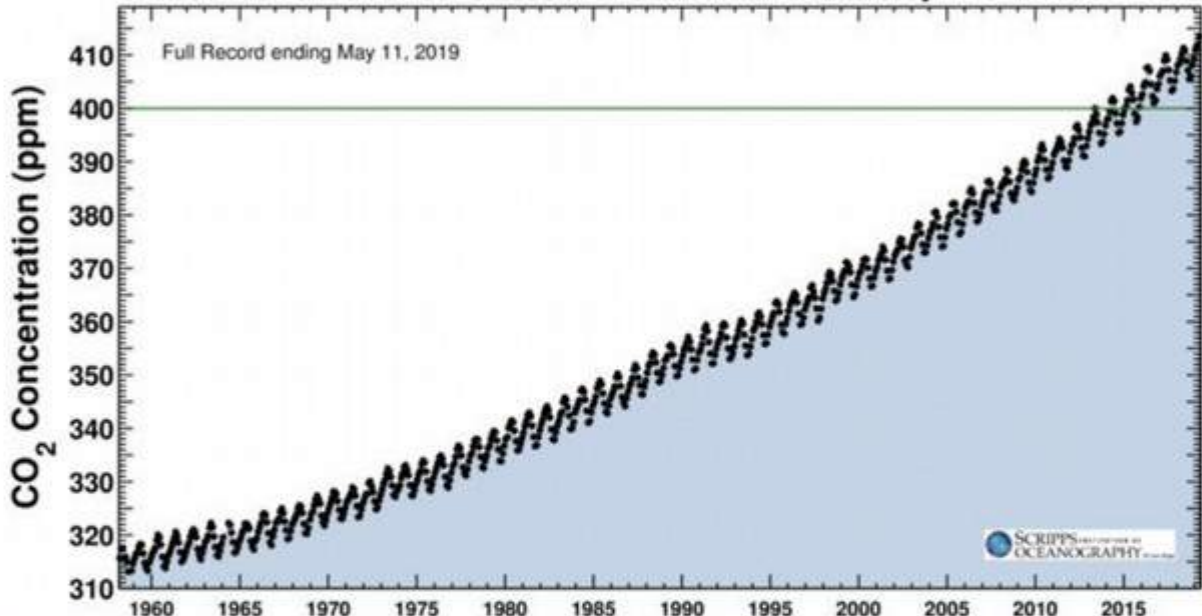
Katastrofa i POPLAVLJE... climate chan... Agriculture a... Roundcube... Climate chan... Tri metra od... HRT: Klimats... Niškougjičn... Just Transiti... It's Official:...

sciencealert

Trending Latest Sections

Latest CO<sub>2</sub> reading  
May 11, 2019  
**415.26 ppm**  
Carbon dioxide concentration at Mauna Loa Observatory

Full Record ending May 11, 2019



CO<sub>2</sub> Concentration (ppm)

310 320 330 340 350 360 370 380 390 400 410

1960 1965 1970 1975 1980 1985 1990 1995 2000 2005 2010 2015

SCRIPPS INSTITUTION OF OCEANOGRAPHY

(The Keeling Curve)

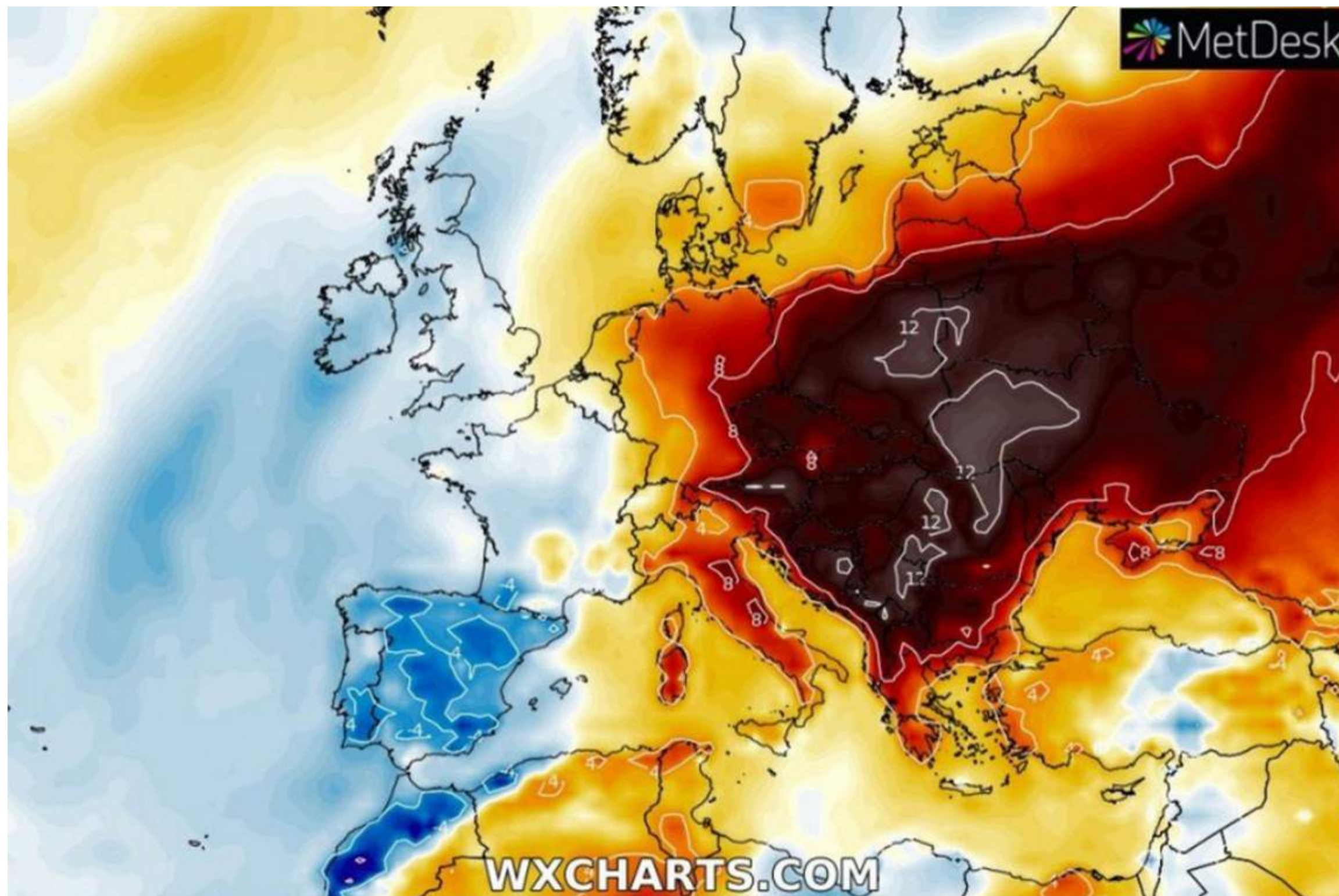
ENVIRONMENT

## It's Official: Atmospheric CO<sub>2</sub> Just Exceeded 415 ppm For The First Time in Human History

PETER DOCKRILL 13 MAY 2019

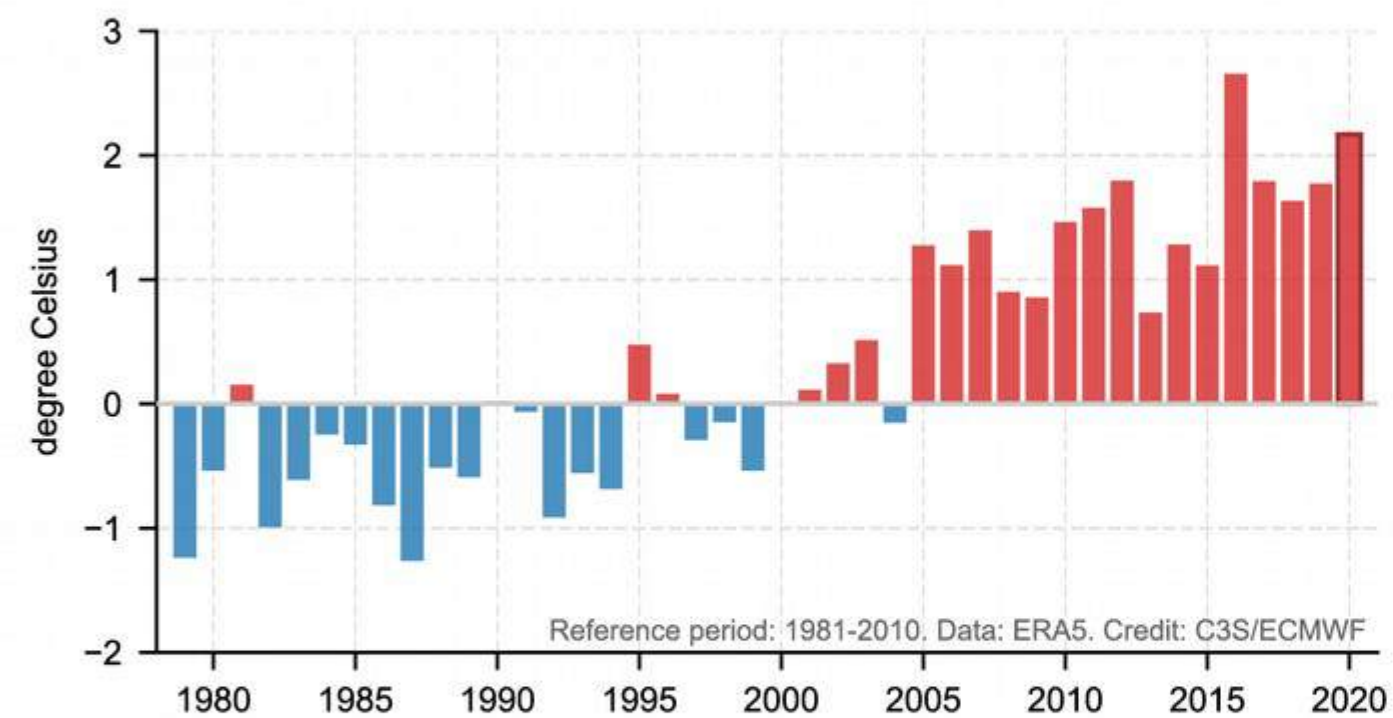
Yet another alarming milestone of humanity's damaging effect on the environment has now officially been reached – crossing a barrier into a hot, polluted future like the planet hasn't witnessed in millions of years.



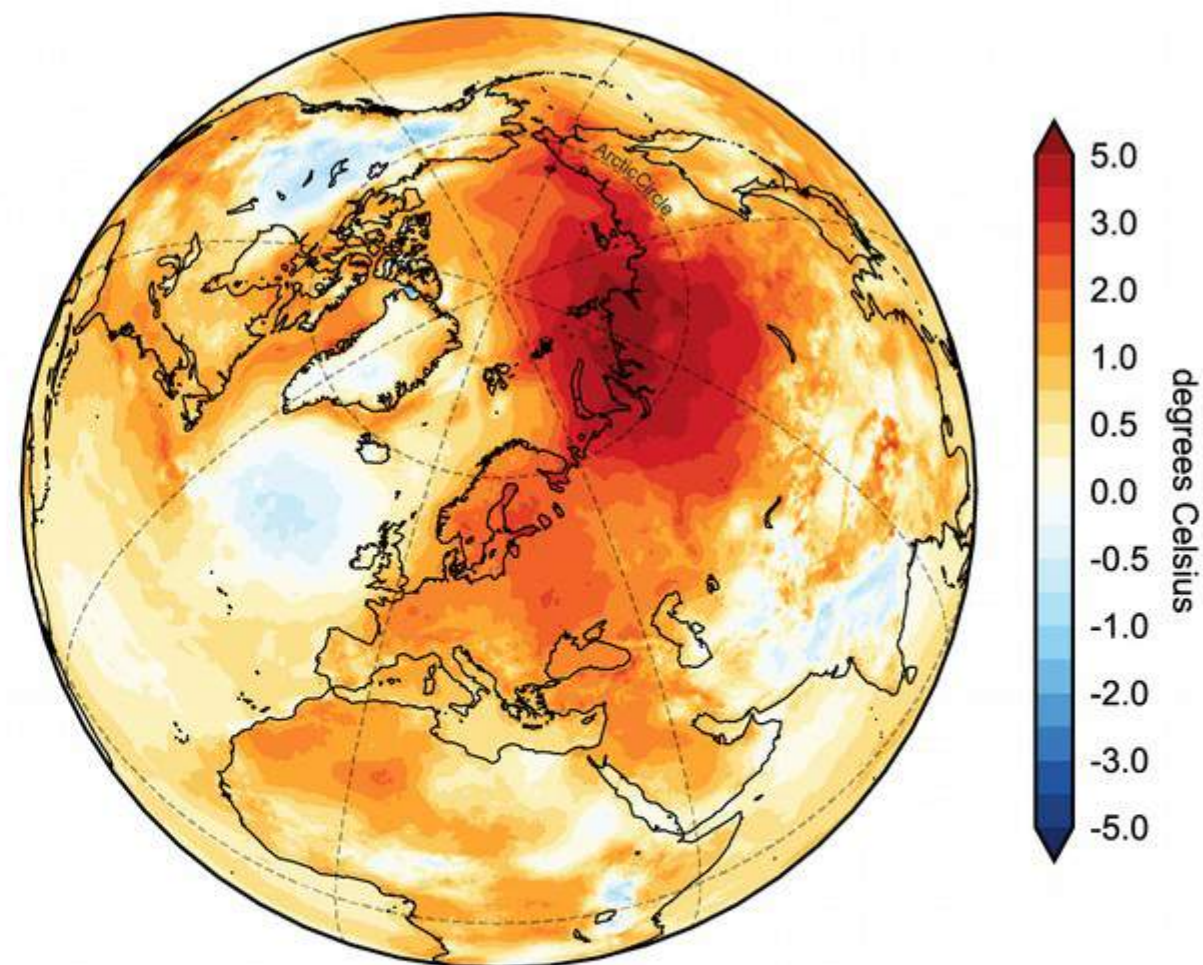




Arctic annual mean surface temperature anomalies



Surface temperature anomaly for 2020



Copernicus Climate Change Service  
European State of the Climate | 2020



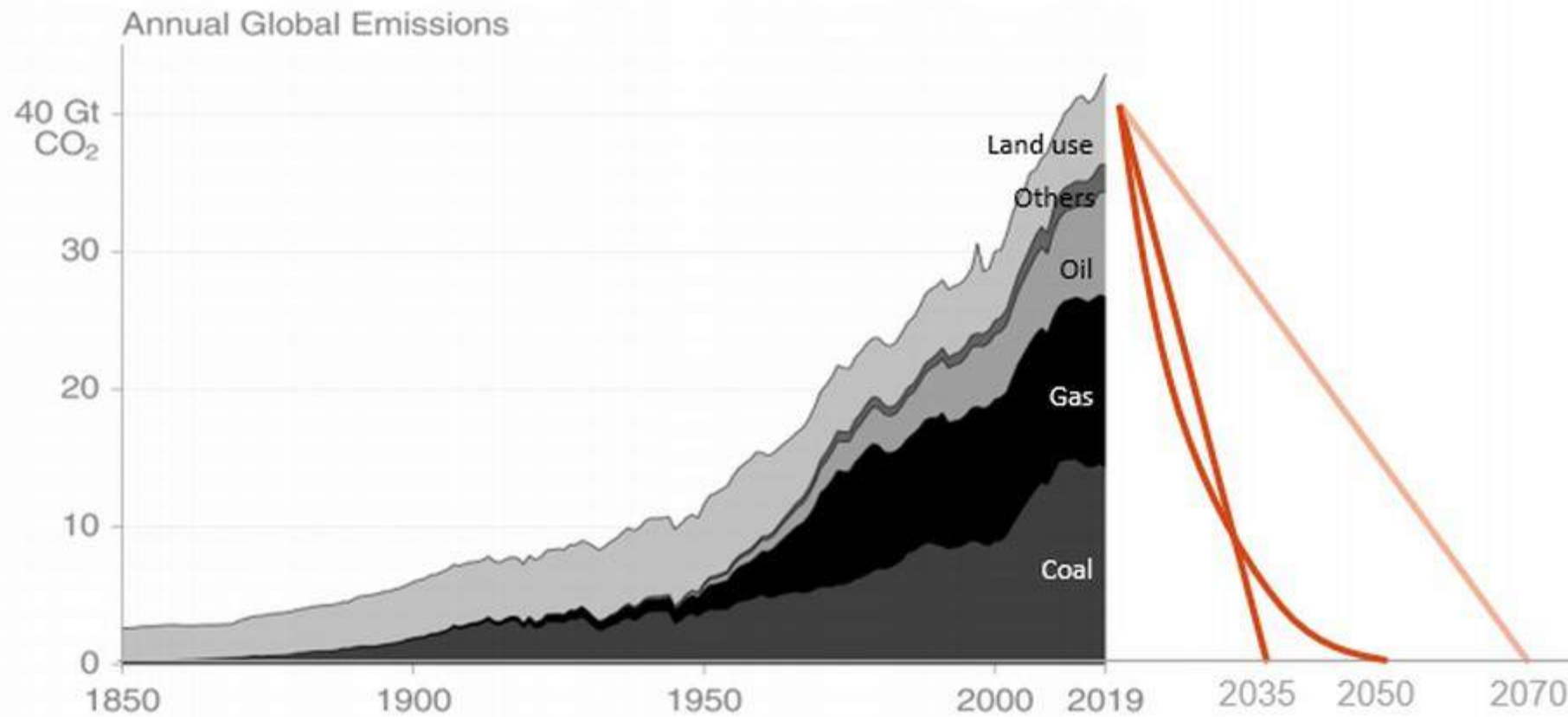
Copernicus  
Europe's eyes on Earth

IMPLEMENTED BY

ECMWF

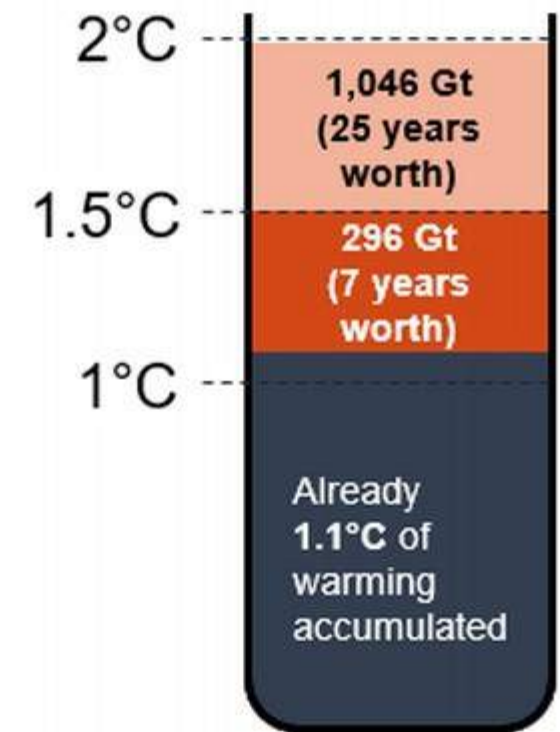


## Global total CO<sub>2</sub> emissions



SOURCE: IPCC, Global Warming of 1.5°C; Global Carbon Project

## Remaining carbon budget at 01/01/2021





# CLIMATE RISKS: 1.5°C VS 2°C GLOBAL WARMING

## EXTREME WEATHER

100% increase in flood risk. | vs | 170% increase in flood risk.

## SPECIES

6% of insects, 8% of plants and 4% of vertebrates will be affected. | vs | 18% of insects, 16% of plants and 8% of vertebrates will be affected.

## WATER AVAILABILITY

350 million urban residents exposed to severe drought by 2100. | vs | 410 million urban residents exposed to severe drought by 2100.

## ARCTIC SEA ICE

Ice-free summers in the Arctic at least once every 100 years. | vs | Ice-free summers in the Arctic at least once every 10 years.

## PEOPLE

9% of the world's population (700 million people) will be exposed to extreme heat waves at least once every 20 years. | vs | 28% of the world's population (2 billion people) will be exposed to extreme heat waves at least once every 20 years.

## SEA-LEVEL RISE

46 million people impacted by sea-level rise of 48cm by 2100. | vs | 49 million people impacted by sea-level rise of 56cm by 2100.

## OCEANS

Lower risks to marine biodiversity, ecosystems and their ecological functions and services at 1.5°C compared to 2°C.

## CORAL BLEACHING

70% of world's coral reefs are lost by 2100. | vs | Virtually all coral reefs are lost by 2100.

## COSTS

Lower economic growth at 2°C than at 1.5°C for many countries, particularly low-income countries.

## FOOD

Every half degree warming will consistently lead to lower yields and lower nutritional content in tropical regions.



# Global temperature rise

+2°

## PROBLEMATIC

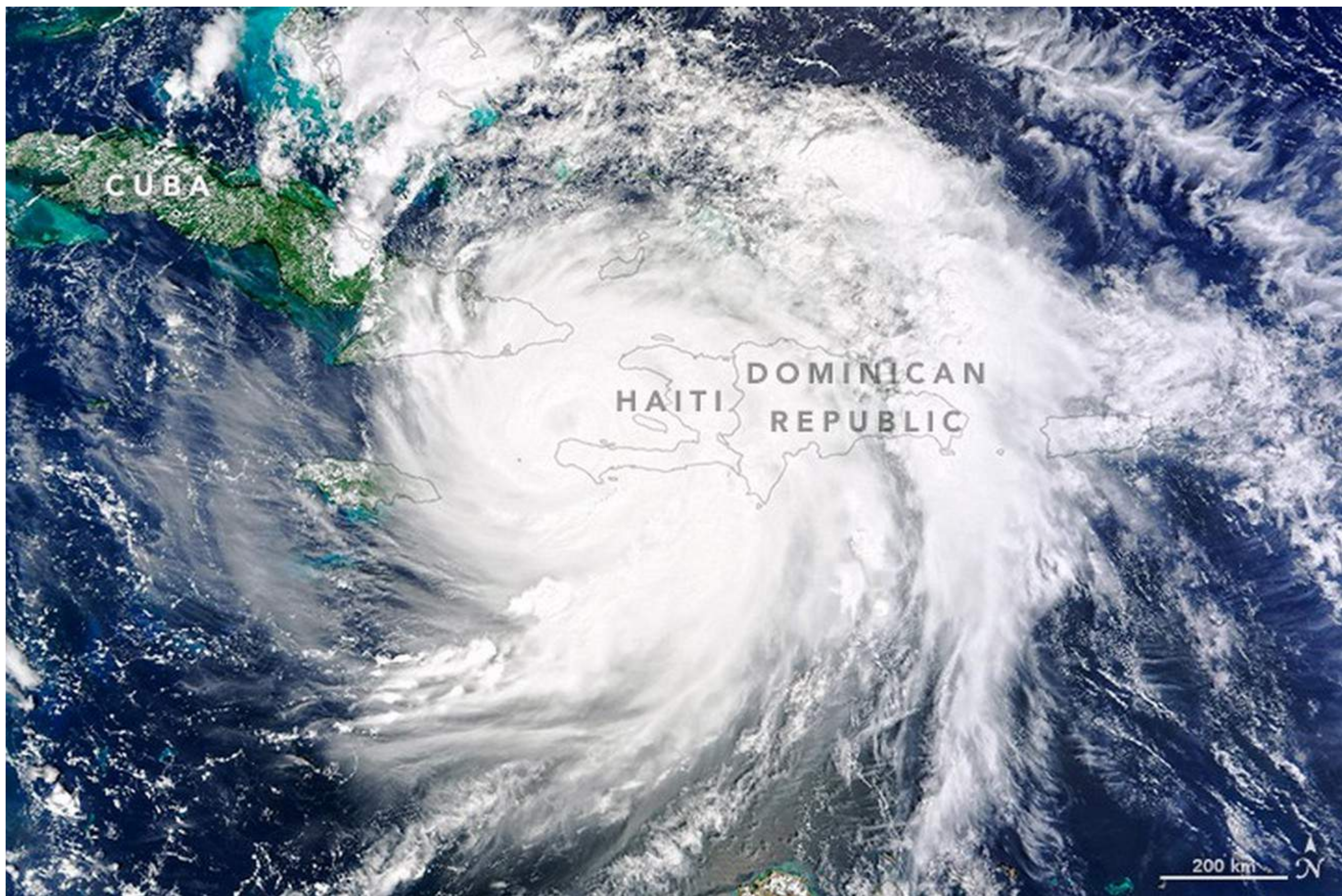
- 1 - 2 billion additional people with water stress
- Impacts on cereal productivity at low latitudes
- Increased coastal flooding and storms
- Greater depth of seasonal permafrost thaw

+4°

## DISASTROUS

- A 16 °C increase in the Arctic
- 1.1 - 3.2 billion additional people with water stress
- Widespread coral mortality; risk of major extinctions around the globe
- Substantial global impact on major crops
- Long-term prospect of sea level rise



















## Vidljive posljedice u svijetu

- Uragan Katrina pogodio SAD 2005. godine – više od 1.800 mrtvih, najveća šteta u gradu New Orleans (pretežno Afro-američko stanovništvo), a na vidjelo izašao duboko ukorijenjen rasizam u SAD-u
- Super-tajfun Haiyan 2013. godine poharao jugoistočnu Aziju: najjači kopneni tropski ciklon ikad zabilježen, ostavio za sobom najmanje 6.300 mrtvih na Filipinima
- Tajfuni pogađaju jugoistočnu Aziju skoro svake godine, intenzitet je sve veći te pogiba na tisuće ljudi
- Uragan Maria pogodio je 2017. godine Portoriko – najjača oluja na tom području u 89 godina, ogromne poplave, skoro 3.000 mrtvih, pola godine cijela zemlja bez struje, a većina i bez infrastrukture za pitku vodu
- Tajfun Mangkhut je 2018. poharao obale Jugoistočne Azije i SAD-a – najjači nakon Haiyana, stotine mrtvih, većinom na Filipinima
- 2017. godine rekordni požari u Jugoistočnoj Europi - uništili više od 1,2 milijuna hektara šuma i zemljišta u Europi što je više od ukupne površine Cipra; umrlo je 127 ljudi i nanesena ekonomska šteta koja se procjenjuje na gotovo 10 milijardi eura.
- Trend prema duljim požarnim sezonama u odnosu na prethodne godine, a požari se sada javljaju i mnogo prije/van sušnih i vrućih ljetnih mjeseci (srpanj-rujan). U 2017. godini najkritičniji mjeseci bili su lipanj i listopad, kada su smrtonosni požari zahvatili Portugal i sjevernu Španjolsku.



- Mediteransko područje ostaje najteže zahvaćeno područje. Međutim, neuobičajeno sušna ljeta u središnjoj i sjevernoj Europi dovela su 2018. do velikih požara u zemljama poput Švedske, Njemačke i Poljske, kojih je u povijesti bilo vrlo malo. Klimatski znanstvenici kažu da će Arktik i druga područja koja su nekada bila relativno bez požara vjerojatno postati ranjivija.
- Ove je godine u Europskoj uniji zabilježeno više od 1.600 požara - više od tri puta više od prosjeka u proteklom desetljeću (<https://tinyurl.com/yy3cu76q> ).
- Požari u Amazoniji – tri puta više nego lani (više od 74,000), gorili tjednima; većinom kriva (ilegalna) ljudska djelatnost, ali se proširili brzo zbog suše. U isto vrijeme (s manje medijske pozornosti), bilo je puno više požara u subsaharskoj Africi.
- Dio razloga ovih nedavnih požara je vrućina. Prošli je srpanj bio najtopliji srpanj od kada postoje mjerenja. Mnogi dijelovi Europe srušili su toplinske rekorde: Francuska, Njemačka, Poljska, Španjolska, Češka, Nizozemska, Velika Britanija. Ta je vrućina isušila vegetaciju i ostavila ogromne površine šuma i travnjaka.
- Kako klimatske promjene jačaju, razdoblja ekstremne vrućine postajat će sve duža, učestalija i intenzivnija. Slično je s ekstremnim zimama – dakle brišu se godišnja doba
- **Posljedice sveg ovog se osjećaju na svim razinama: društvenoj, ekonomskoj, političkoj, a najteže su u zemljama u razvoju te siromašnijim područjima**

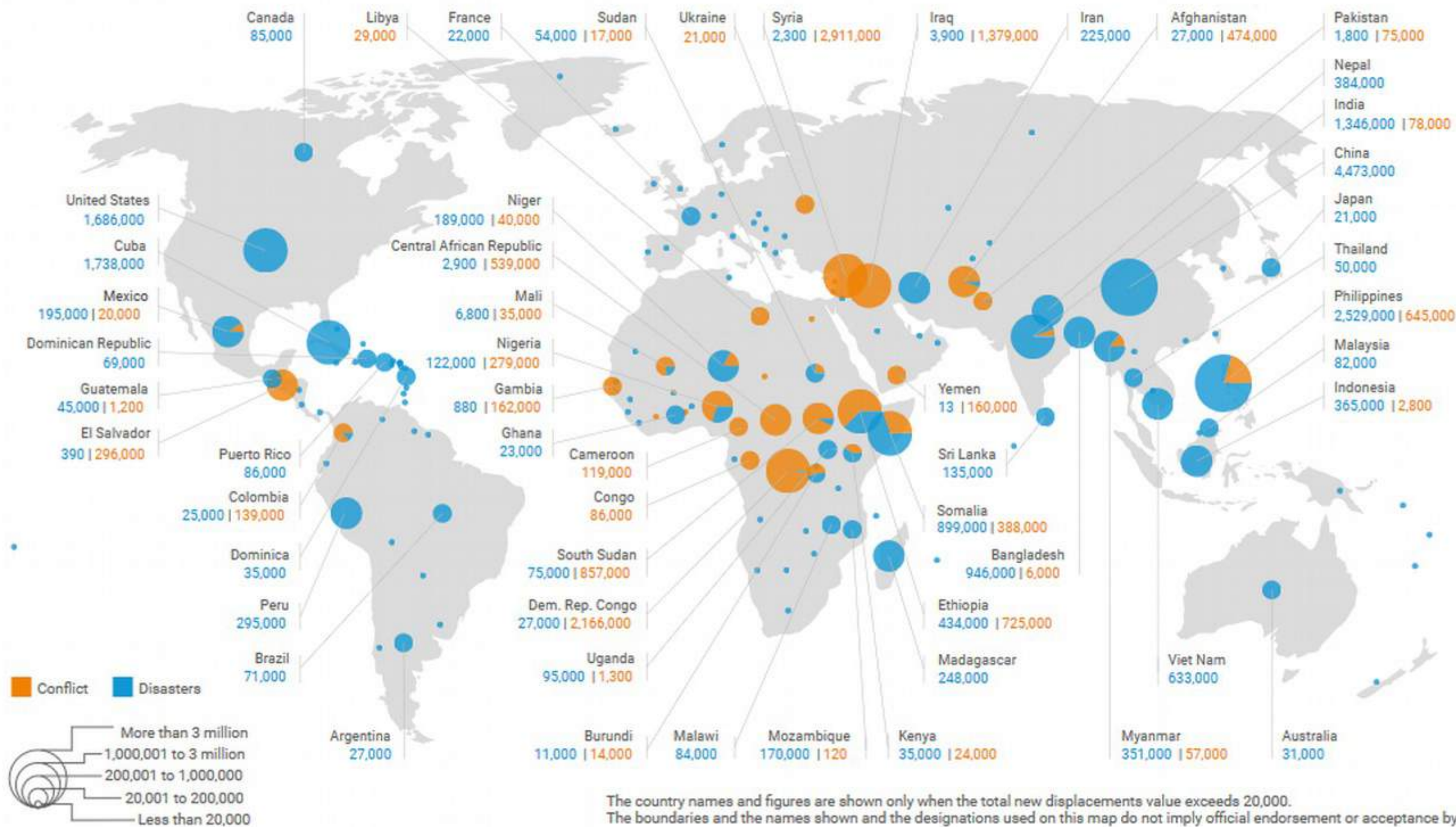


- Jedna od sve izraženijih posljedica – **MIGRACIJE**
- Većina je „klimatskih” migracija trenutno unutarnja, a ne prekogranična, **ALI:**
- à Klimatske promjene i prirodne katastrofe mogu pogoršati prijetnje koje prisiljavaju ljude da bježe preko međunarodnih granica. Međusobna povezanost klime, sukoba, siromaštva i progona uvelike povećava složenost migracija i izbjeglištva.
- U 2018. godini, ekstremni vremenski događaji poput jake suše u Afganistanu, tropskog ciklona Gita u Samoi i poplava na Filipinima rezultirali su akutnim humanitarnim potrebama. Prema Centru za nadzor internih raseljavanja zabilježeno je 18,8 milijuna novih unutarnjih migracija povezanih s katastrofama u 2017. godini.
- UN: 80% populacije raseljenih zbog klimatskih promjena su žene
- SLIKA: Poplave u Pakistanu 2010. godine, gdje su više od 70% raseljenih bile žene i djeca





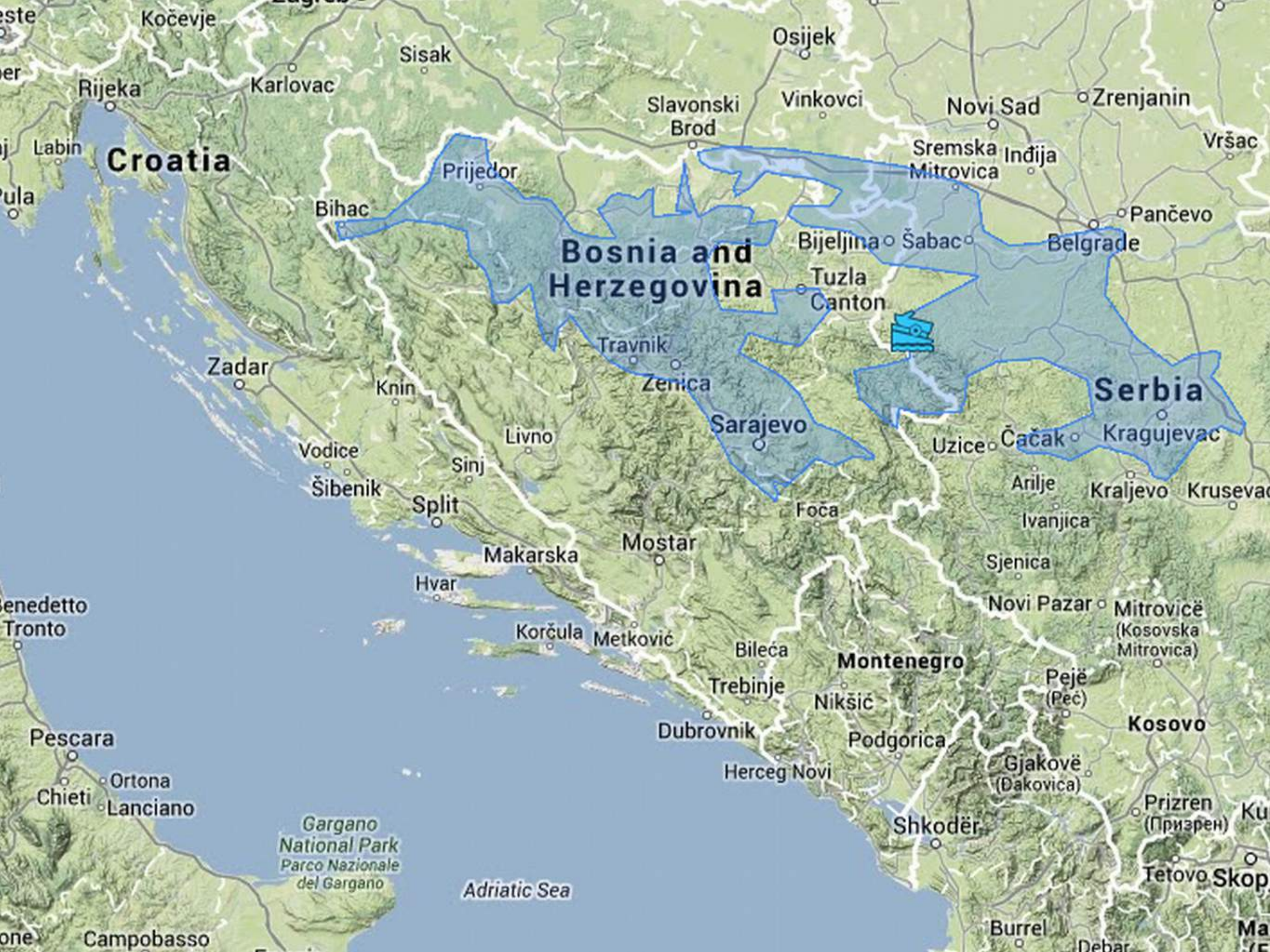
## New displacement by conflict and disasters in 2017











**Croatia**

**Bosnia and Herzegovina**

**Serbia**

**Montenegro**

**Kosovo**

Adriatic Sea

Gargano National Park  
Parco Nazionale del Gargano

Pescara  
Ortona  
Chieti  
Lanciano

Campobasso

Ma  
(V)









ST

**11,000 SCIENTISTS DECLARE  
“CLIMATE EMERGENCY”**

***THE BIG STORY***







# Klimatske politike





1.5 DEGREES



# The Paris climate agreement: key points

The historic pact, approved by 195 countries, will take effect from 2020



## Temperatures

2100



- **Keep warming "well below 2 degrees Celsius":** Continue all efforts to limit the rise in temperatures to 1.5 degrees Celsius

## Finance

2020-2025



- **Rich countries must provide 100 billion dollars from 2020, as a "floor"**
- Amount to be updated by 2025

## Differentiation



- **Developed countries must continue to "take the lead" in the reduction of greenhouse gases**
- Developing nations are encouraged to "enhance their efforts" and move over time to cuts

## Emissions objectives

2050



- **Aim for greenhouse gases emissions to peak "as soon as possible"**
- **From 2050: rapid reductions to achieve a balance between emissions from human activity and the amount that can be captured by "sinks"**

## Burden-sharing



- **Developed countries must provide financial resources to help developing countries**
- Other countries are invited to provide support on a voluntary basis

## Review mechanism

2023



- **A review every five years**  
First world review: 2023
- Each review will inform countries in "updating and enhancing" their pledges

## Climate damage



- **Vulnerable countries have won recognition of the need for "averting, minimising and addressing" losses suffered due to climate change**





United Nations  
Climate Change

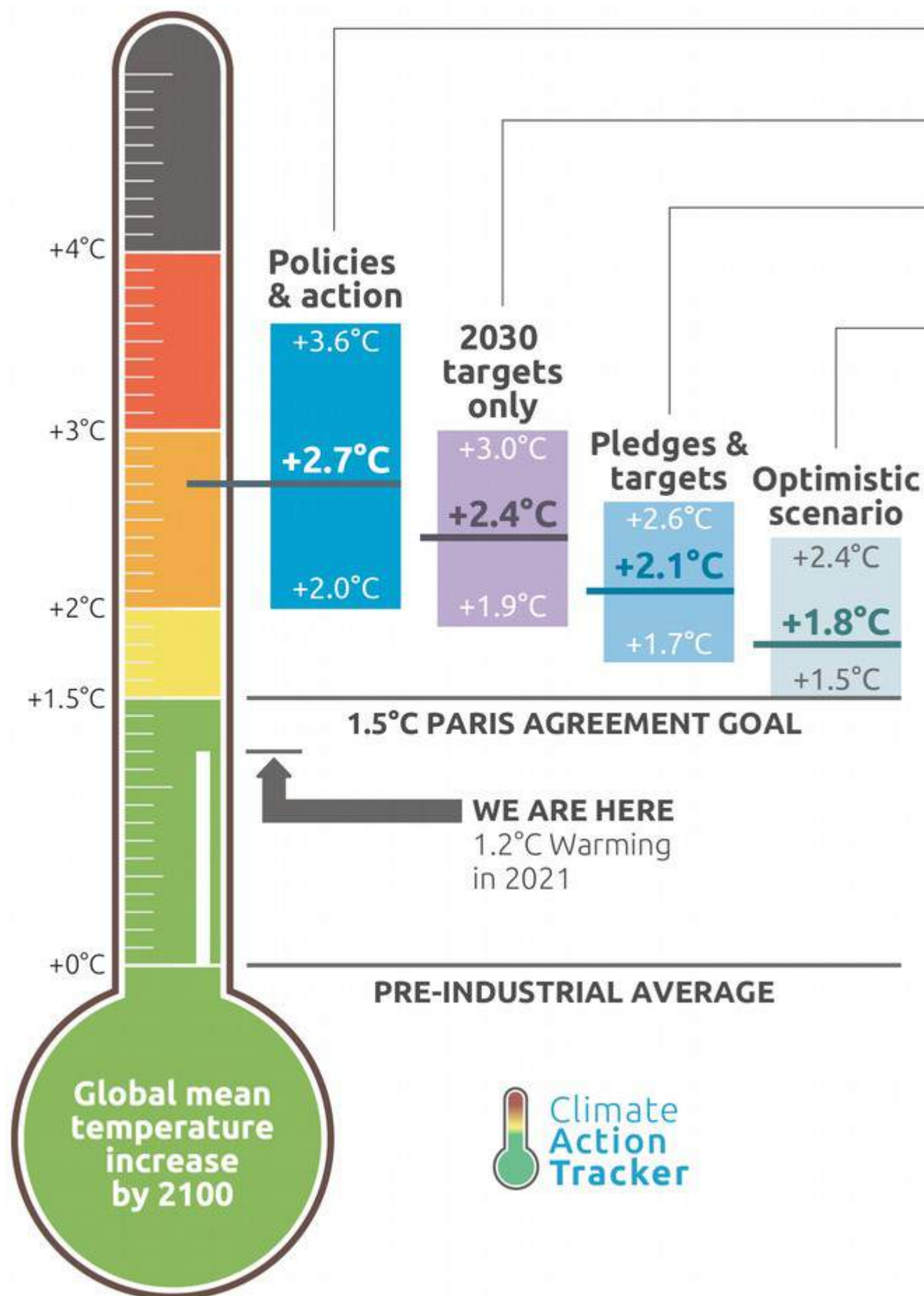


UN CLIMATE CHANGE  
CONFERENCE UK 2021

IN PARTNERSHIP WITH ITALY







## Policies & action

Real world action based on current policies

## 2030 targets only

Full implementation of 2030 NDC targets\*

## Pledges & targets

Full implementation of submitted and binding long-term targets and 2030 NDC targets\*

## Optimistic scenario

Best case scenario and assumes full implementation of all **announced** targets including net zero targets, LTSs and NDCs\*

\* If 2030 NDC targets are weaker than projected emissions levels under policies & action, we use levels from policy & action

CAT warming projections  
**Global temperature increase by 2100**

November 2021 Update



s that to stand a 50% chance of avoiding more than 1.5C o





# Who has contributed most to global CO<sub>2</sub> emissions?

Cumulative carbon dioxide (CO<sub>2</sub>) emissions over the period from 1751 to 2017. Figures are based on production-based emissions which measure CO<sub>2</sub> produced domestically from fossil fuel combustion and cement, and do not correct for emissions embedded in trade (i.e. consumption-based). Emissions from international travel are not included.

## North America

457 billion tonnes CO<sub>2</sub>  
29% global cumulative emissions

### USA

399 billion tonnes CO<sub>2</sub>  
25% global cumulative emissions

### Canada

32 billion t  
2%

### Mexico

19 billion t  
1.2%

## Asia

457 billion tonnes CO<sub>2</sub>  
29% global cumulative emissions

### China

200 billion tonnes CO<sub>2</sub>  
12.7% global cumulative emissions

### Japan

62 billion t  
4%

## EU-28

353 billion tonnes CO<sub>2</sub>  
22% global cumulative emissions

## Russia

101 billion tonnes  
6% global emissions

## India

48 billion t  
3%

## South Korea

16 billion t  
1%

## Taiwan

8 billion t  
0.5%

## Thailand

7 billion t  
0.45%

## Uzbekistan

6 billion t  
0.4%

## Saudi Arabia

14 billion t  
0.9%

## Malaysia

5 billion t  
0.33%

## Pakistan

4.4 billion t  
0.28%

## North Korea

5 billion t  
0.32%

## UAE

4 billion t  
0.26%

## Indonesia

12 billion t  
0.8%

## Iraq

4 billion t  
0.25%

## Azerbaijan

2.5 billion t  
0.16%

## Turkmenistan

2.2 billion t  
0.14%

## Israel

2 billion t  
0.13%

## Singapore

1.9 billion t  
0.12%

## Vietnam

3 billion t  
0.2%

## Philippines

3 billion t  
0.2%

## Syria

1.4 billion t  
0.11%

## Kuwait

2.8 billion t  
0.17%

## Hong Kong

1.3 billion t  
0.1%

## South Africa

19.8 billion t  
1.3%

## Algeria

4.1 billion t (0.26%)

## Brazil

14.2 billion t  
0.9%

## Venezuela

7.6 billion t  
0.5%

## Australia

17.4 billion t  
1.1%

## Nigeria

3.4 billion t (0.21%)

## Libya

2 billion t (0.12%)

## Morocco

1.1 billion t (0.1%)

## Colombia

3.1 billion t (0.2%)

## Chile

2.7 billion t (0.17%)

## New Zealand

1.3 billion t (0.1%)

## Egypt

5.6 billion t (0.35%)

## Turkey

9.6 billion t (0.6%)

## Ukraine

19 billion t (1.2%)

## Switzerland

2.9 billion t (0.2%)

## Serbia

1.4 billion t (0.1%)

## Norway

2.8 billion t (0.18%)

## Europe

514 billion tonnes CO<sub>2</sub>  
33% global cumulative emissions

Africa  
43 billion tonnes CO<sub>2</sub>  
3% global emissions

South America  
40 billion tonnes CO<sub>2</sub>  
3% global emissions

Oceania  
20 billion tonnes CO<sub>2</sub>  
1.2% global emissions

Figures for the 28 countries in the European Union have been grouped as the 'EU-28' since international targets and negotiations are typically set as a collaborative target between EU countries. Values may not sum to 100% due to rounding.

Data source: Calculated by Our World in Data based on data from the Global Carbon Project (GCP) and Carbon Dioxide Analysis Center (CDIAC).

This is a visualization from OurWorldinData.org, where you find data and research on how the world is changing.

Licensed under CC-BY by the author Hannah Ritchie.



# KAKO JE KOPNIO SPORAZUM

😊 “Ubrzati ukidanje korištenja ugljena i subvencija za fosilna goriva”



😐 “Ubrzati ukidanje korištenja **neoslabljenog** ugljena i **neučinkovitih** subvencija za fosilna goriva”



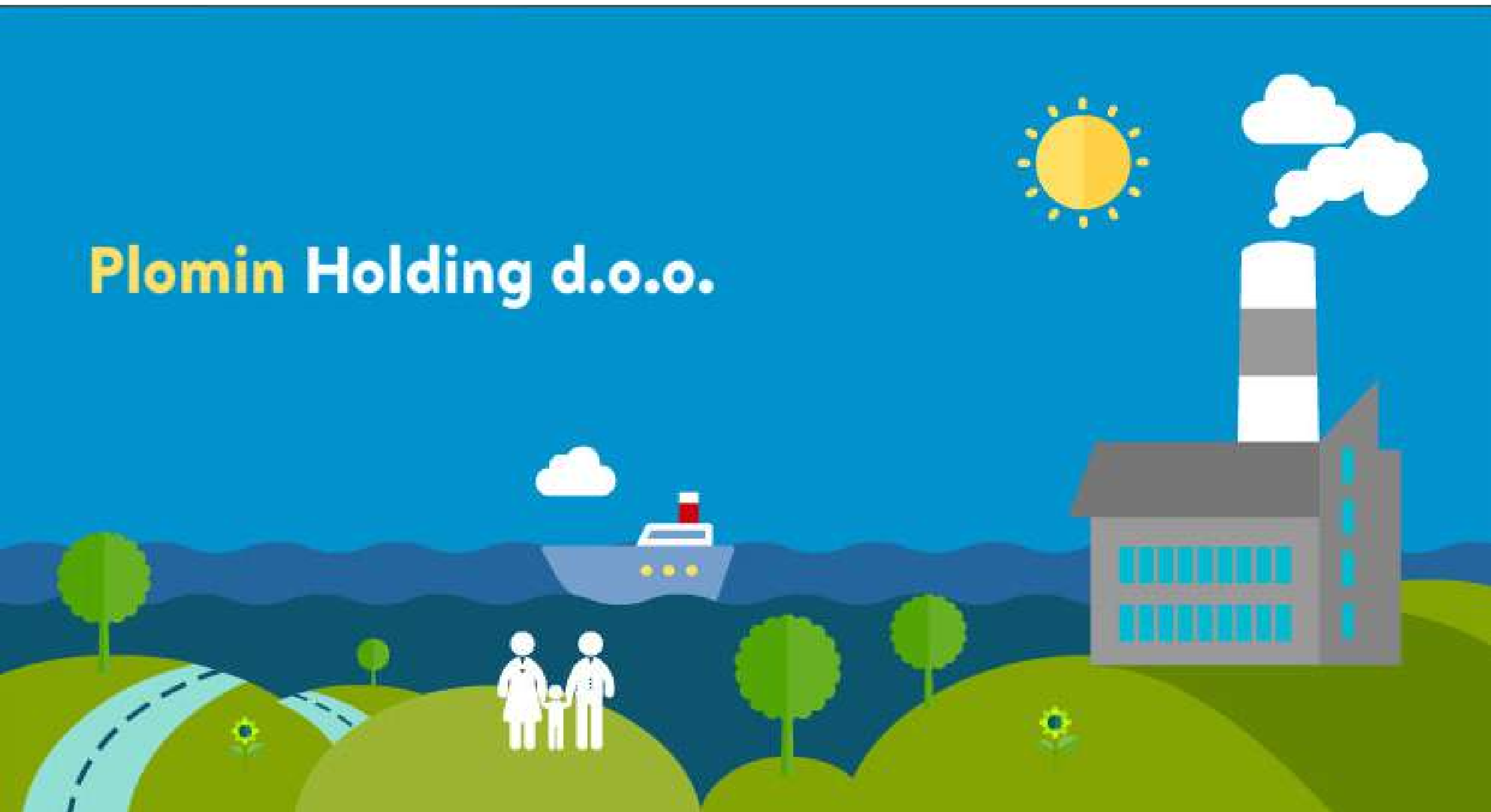
😞 “Ubrzati **POSTUPNO SMANJENJE** korištenja **neoslabljenog** ugljena i **POSTUPNO UKIDANJE** **neučinkovitih** subvencija za fosilna goriva”

Izvor: COP26





**Plomin** Holding d.o.o.





# Renewable energy in 2020

● % of gross final energy consumption

● 2020 target

Countries overachieving their targets  
Countries meeting their targets  
Countries under their targets



SWEDEN



FINLAND



LATVIA



AUSTRIA



PORTUGAL



DENMARK



CROATIA



ESTONIA



LITHUANIA



SLOVENIA



ROMANIA



BULGARIA



EU



GREECE<sup>1</sup>



SPAIN



ITALY



GERMANY



FRANCE



SLOVAKIA



CZECHIA



CYPRUS



IRELAND



POLAND<sup>2</sup>



NETHERLANDS



HUNGARY



BELGIUM



LUXEMBOURG



MALTA



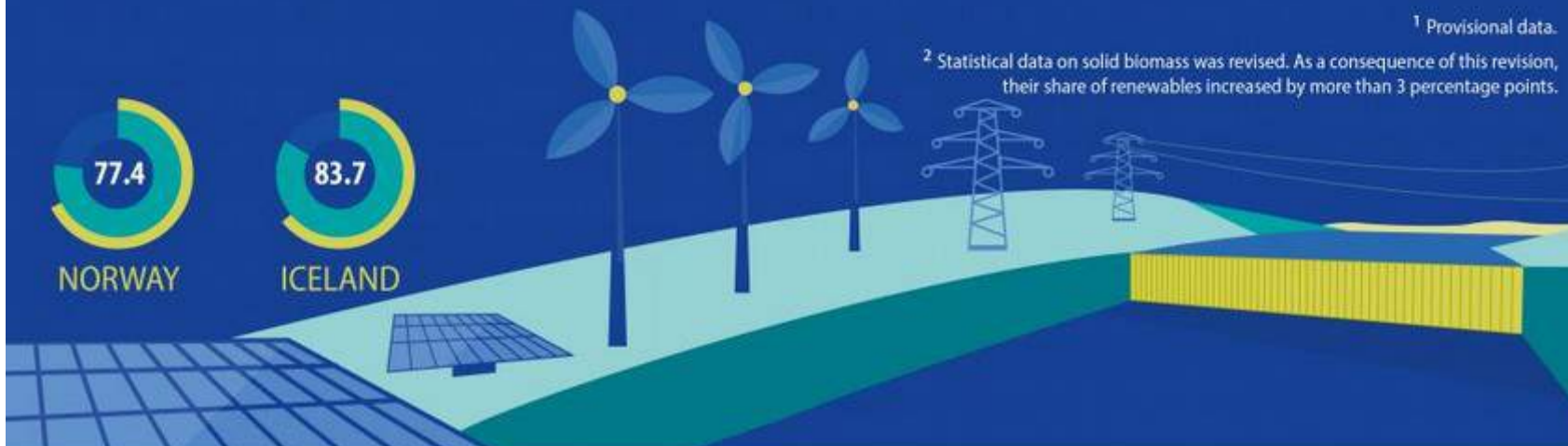
NORWAY



ICELAND

<sup>1</sup> Provisional data.

<sup>2</sup> Statistical data on solid biomass was revised. As a consequence of this revision, their share of renewables increased by more than 3 percentage points.

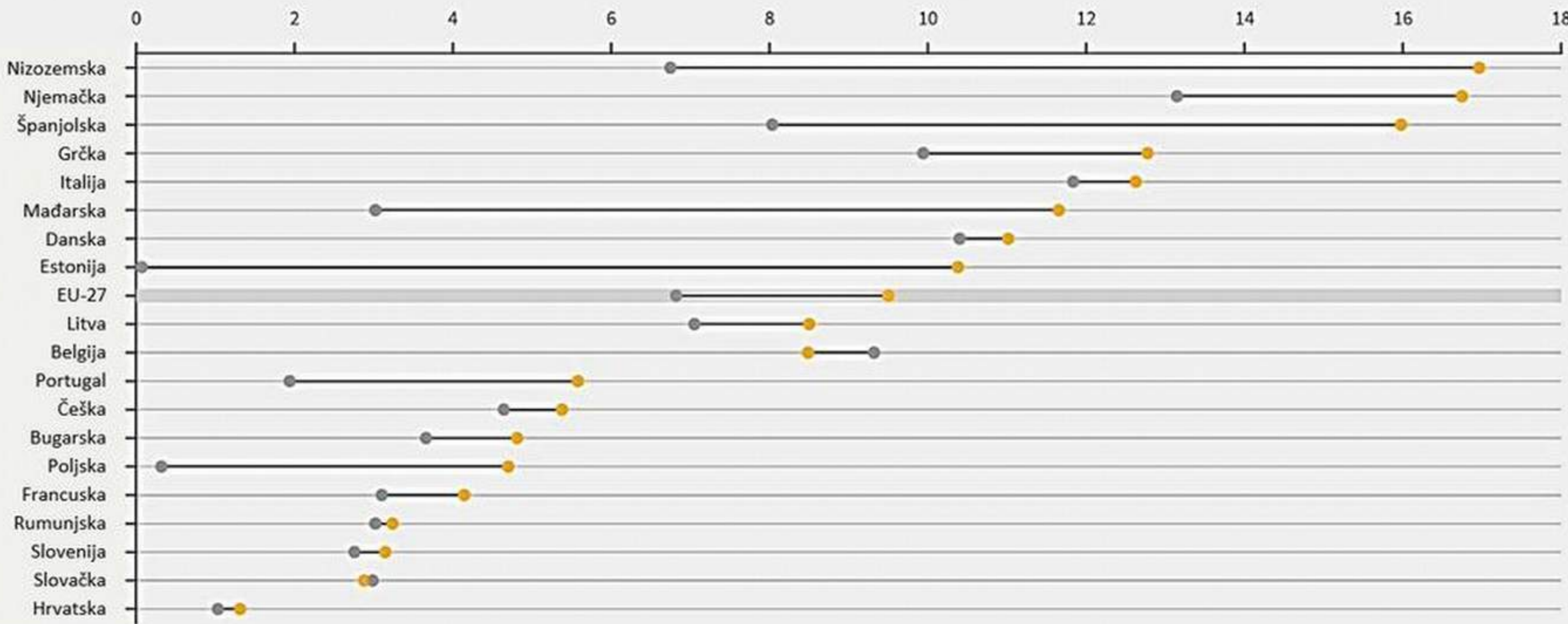




# Postotni udio energije iz sunčanih elektrana

u ukupnoj potrošnji EU u ljetnom periodu (lipanj – srpanj 2021. godine)

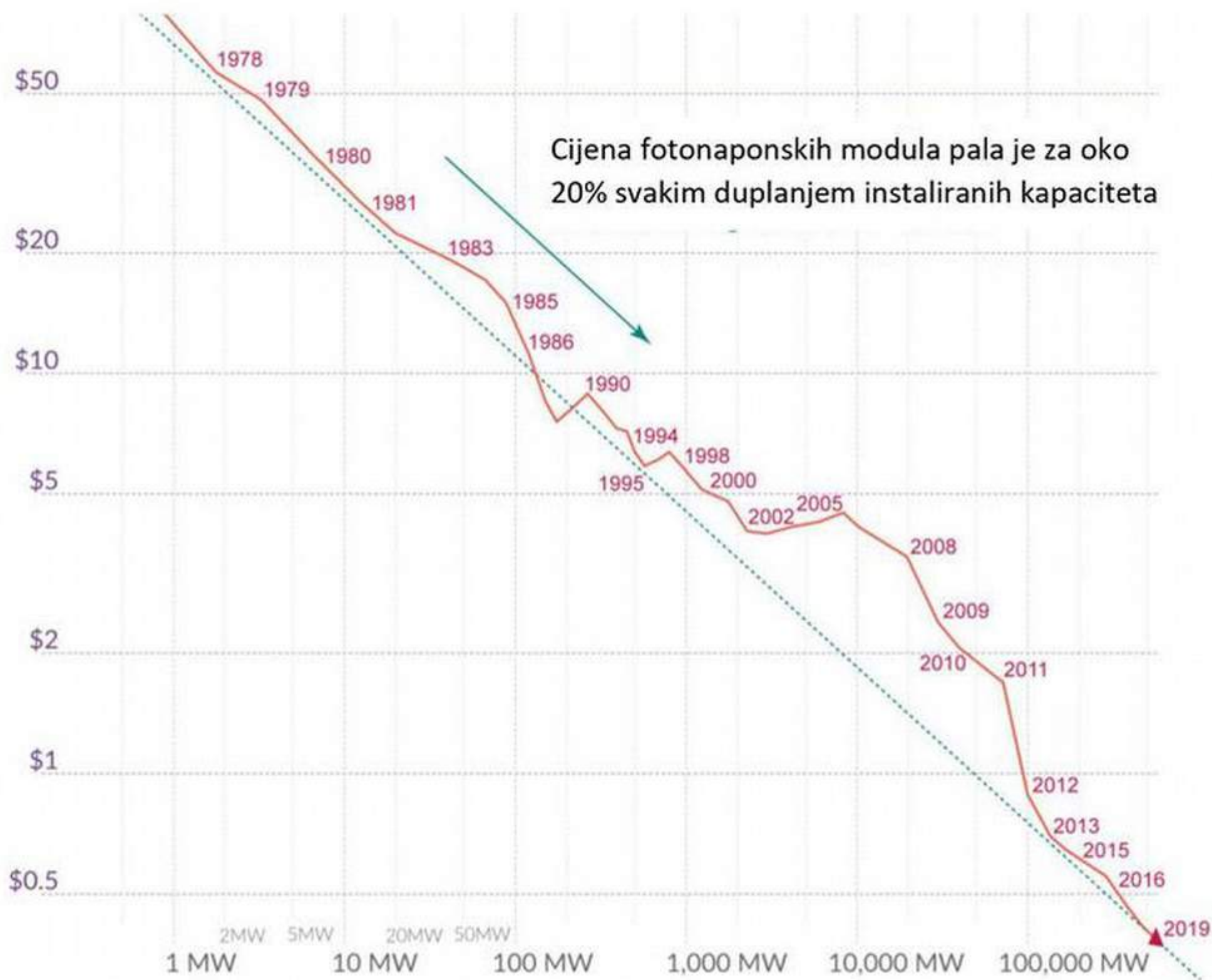
Godina ● 2018 ● 2021



Napomena: Iz prikaza su isključene države koje u promatranom periodu nisu prijavile proizvodnju energije iz sunčanih elektrana  
Austrija je isključena iz prikaza zbog pitanja kvalitete podataka  
Apsolutna proizvodnja energije iz sunčanih elektrana u Belgiji se povećala dok se postotni udio sunčane energije u ukupnoj potrošnji energije smanjio



## Cijena fotonaponskih modula (kao osnovnog dijela opreme sunčanih elektrana) pala je za 99,6% od 1976. godine



### Kretanje cijena opreme sunčanih elektrana

Izvor: OurWorldinData.org (<https://ourworldindata.org/cheap-renewables-growth>), autor Max Roster







# PRINCIPI KLIMATSKE PRAVDE

- Povijesna odgovornost
- Solidarnost
- “root causes”
- Definiranje “false solutions”
- “South perspective”
- Pravedna tranzicija
- Hitnost klimatske krize
- System change not climate change
- Povezivanje i izgradnja robusnog i povezanog globalnog pokreta



Mobilizacija,  
transformacija i rješenja









1  
RISING °C











ABA ROAD









## Dutch court orders Shell to pay Nigerian farmers for oil leaks































#SOSzajadran

S.O.S. ZA JADRAN

















**CONGRATULATIONS  
UPPSALA!**

**SWEDEN'S 4TH LARGEST CITY**

**VOTES TO GO FOSSIL FREE**



A Norwegian flag flies on a tall pole against a clear blue sky. In the foreground, there are several traditional red wooden houses with white window frames and doors. The houses are situated on a hillside, and a steep, rocky mountain is visible in the background.

World's richest  
sovereign wealth fund

# **NORWAY DUMPS COAL & TAR SAND COMPANIES BECAUSE OF HIGH RISK TO CLIMATE**







































